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cancel.

predictive traveling path is displayed on the plane model and the predictive traveling path has a thickness to indicate the width of the vehicle.

REMARKS

Claims 1-53 and 55-86 are pending. By this Amendment, claim 21 has been properly numbered, claims 53, 66, 68 and 76 have been amended and claim 54 has been cancelled without prejudice to or disclaimer of the subject matter contained therein. The first occurrence of the claim numbered 22 has solely been amended to correct the typographical error in the numbering of claim 21. No new matter has been added. Reconsideration in view of the above amendments and following Remarks is respectfully requested.

Applicants greatly appreciate the allowance of claims 57-65 and 79-86 and the indication that claims 3-6, 13, 19, 28, 36-41, 44, 46-50, 52 and 77 contain allowable subject matter. However, for the reasons discussed below, Applicants assert all of claims 1-53 and 55-86 are allowable.

Claims 1, 2, 7-12, 14-18, 20-27, 29-35, 42, 43, 45, 51, 53-56, 66-76 and 78 were rejected under 35 U.S.C. §102(e) over Shimizu, U.S. Patent No. 5,945,799. The rejection of claim 54 has been rendered moot by the cancellation of claim 54. The rejection of the remaining claims is respectfully traversed.

Applicants respectfully assert Shimizu fails to disclose a vehicle drive assist system comprising display means for displaying the image picked up by the camera as recited in Applicants' claims 1, 16, 17, 20-24, 27, 31, 53, 56, 60, 66, 68 and 72-75 and as similarly recited in Applicants' claim 76. Applicants' claimed invention is advantageous in providing the driver with a display comprising a captured image of the area existing in the traveling direction of the vehicle along with drive assist information.

Applicants respectfully assert that while Shimizu may disclose an automatic steering system for a vehicle, which automatically parks the vehicle in a parking area without any

steering operation by a driver (Background of the Invention), Shimizu fails to disclose a display means for displaying an image captured by a camera as recited in Applicants' claims. The automatic steering system disclosed in Shimizu comprises eight object detecting means S6 including a sonar system, radar system, and/or television camera and the like (col. 2, lines 16-18) and an operational stage display device (11) which displays the current stage of the parking mode (col. 4, lines 6-12) with an image of a hypothetical vehicle in relation to the an image of the surroundings which is created based on the information obtained from the object detecting means (S6).

In addition, Applicants' respectfully submit Shimizu fails to disclose or suggest that the display device (11) presents an image captured by a camera, rather, it is assumed as Shimizu does not specifically state that it is the parking area that is calculated and prepared on the basis of the information obtained by the object detecting means (S6). However, the images presented in Figs. 2C-2H of Shimizu must be the product of some image processing or calculation because there are multiple object detecting means located in the front, central and rear portions of the vehicle (col. 3, lines 13-15) and the single images presented in Figs. 2C-2H represent a combination of the information obtained from each of the object detecting means. Therefore, Shimizu fails to disclose or even suggest display means for displaying the image picked up from the detecting means as recited in Applicants' claims because the images shown in Figs. 2C-2H of Shimizu must be the result of some image recalculation means which combines all the information obtained from the multiple detecting means (S6) into a single image.

Further, the object of Shimizu is to provide an automatic steering system for a vehicle to be used for garaging the vehicle (col. 1, lines 7-9). Thus, there is no logical reason for the display device (11) to display the image picked up by the camera showing the image of the area existing in the traveling direction of the vehicle because the automatic steering system



automatically parks the vehicle in a parking area without any steering operation by a driver.

For at least these reasons, Applicants respectfully submit Shimizu fails to disclose or even

suggest display means for displaying the image picked up by the camera as recited in

Applicants' claims.

Accordingly, Applicants respectfully assert Shimizu fails to teach, disclose or even suggest all the features of Applicants claims 1, 16, 17, 20-24, 27, 31, 53, 56, 60, 66, 68, and 72-75. In addition, Applicants respectfully submit Shimizu fails to disclose all the features of claims 2, 7-12 and 14-15 which depend from claim 1, all the features of claim 18 which depends from claim 16, all the features of claims 27 and 29-30 which depend from claim 24, all the features of claims 32-35, 42, 43, 45 and 51 which depend from claim 31, all the features of claim 55 which depends from claim 53, all the features of claims 67 and 69-71 which depend from claim 66 and all the features of claim 78 which depends from claim 76.

Further, with respect to claim 76, Applicants respectfully assert Shimizu fails to disclose a vehicle parking assist device wherein a predictive traveling path is displayed on the plane model and the predictive traveling path has a thickness to indicate the width of the vehicle as recited in claim 76. As shown in Figs. 2C-2H of Shimizu, Shimizu only depicts the traveling path of the vehicle by a single arrow and thus, fails to indicate the width of the vehicle. Thus, Applicants respectfully submit Shimizu fails to disclose all the features of Applicants' claim 76 as well as all the features of claim 78 which depends from claim 76. Accordingly, it is respectfully requested the rejection be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-53 and 55-86 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Attachment:
Appendix

Date: December 31, 2001

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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APPENDIX

Changes to Claims:

Claim 54 is canceled.

The following is a marked-up version of the amended claims:

22.21. (Amended) A vehicle parking assist device comprising:

a camera for picking up an image of a backward area of a vehicle;

display means for displaying the image picked up by the camera;

obstacle sensor for detecting presence or absence of an obstacle in the

backward area of the vehicle;

drive assist means for detecting a drive condition and checking if the vehicle backs for parking, the drive assist means, when the vehicle backs, for displaying drive assist information for parking; and

safety check means for checking the parking drive ends on the basis of the result of the obstacle detection by the obstacle sensor, and when the parking drive ends, the safety check means for causing the display means to display the end of the parking drive.

53. (Amended) A vehicle parking assist device comprising:

a camera for picking up an image in a frontward area of a vehicle;

display means for displaying the image from the camera;

storing means for reading and ~~storing~~ storing the image picked up by the camera; and

drive assist means for acquiring information for a vehicle drive assist on the basis of the image stored in the storing means.

66. (Amended) A vehicle parking assist device for assisting a driver in a parking operation comprising:

a camera for picking up an image of an area existing in an advancing direction of a vehicle;

~~display means for displaying the image from the camera;~~

parking position detecting means for detecting a target parking position in which the vehicle is to be parked based on the image picked up by the camera;

steering angle calculating means for calculating a steering angle necessary for the moving of the vehicle to the target parking position detected by the parking position detecting means;

steering angle detecting means for detecting a steering angle of the vehicle;

and

parking assist means for presenting a steering operation guide to the driver on the basis of the result of comparing a steering angle detected by the steering angle detecting means with a steering angle calculated by the steering angle calculating means.

68. (Amended) A vehicle parking assist device for assisting a driver in his parking operation comprising:

a camera for picking up an image of an area existing in an advancing direction of a vehicle;

~~display means for displaying the image from the camera;~~

parking space recognizing means for detecting a parking space in which the vehicle is to be parked, based on the image picked up by the camera; and

parking assist means for judging as to if a parking stopper for blocking the advancing of the vehicle exists in the parking space recognized by the parking space recognizing means and for informing the driver of the result of the judgment.

76. (Amended) A vehicle parking assist device for assisting a driver using image information when he backs a vehicle into a parking space, the vehicle parking assist device comprises:

a camera for picking up a scene of a backward area of the vehicle;

display means for displaying the image of the backward area picked up by the camera, the display means having a screen;

plane model generating means for generating from the backward area image picked up by the camera a plane model containing a parking space in which a self vehicle is to be parked and the parking spaces located adjacent to the parking space, together with the self vehicle and other vehicles being parked; and

parking assist means for effecting a parking assist by displaying a plane model generated by the plane model generating means on the screen of the display means, wherein a predictive traveling path is displayed on the plane model and the predictive traveling path has a thickness to indicate the width of the vehicle.

